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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,490	01/23/2004	Takemori Takayama	KOM-0153/INO/DIV 1	4923
23353	7590	08/10/2005	EXAMINER	
RADER FISHMAN & GRAUER PLLC LION BUILDING 1233 20TH STREET N.W., SUITE 501 WASHINGTON, DC 20036			SAVAGE, JASON L	
			ART UNIT	PAPER NUMBER
			1775	

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/762,490

Applicant(s)

TAKAYAMA ET AL.

Examiner

Jason L. Savage

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 5, 8-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The Examiner was unable to find support for Applicant's amendment to claim 5 that the total amount of the claimed two or more elements forming an intermetallic compound be adjusted to 0.5 to 10% *by volume* (emphasis added). It was noted on page 16, lines 16-22 that the claimed elements are listed as forming intermetallics however the specification recites the content is 0.5 to 10 *weight* (emphasis added) %.

It was further noted that in the paragraph bridging pages 16 and 17 of the specification that the total amount of intermetallic compounds is taught to be 0.1 to 10% by volume when two or more elements selected from the group consisting of Cu, Sn, Ca, Mn, Cr, Mo, W, Sb and Te are further dispersed in the copper based sintered contact material. However there is no teaching in the specification or the claims as originally filed which recite the intermetallic compound content of two elements selected from the group consisting of Ni, Si, Ti, Co, Al, V and P being in % by volume.

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As such, the newly added limitation is considered new matter and should be removed from the claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 5, 8-10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Takayama'549 et al (US 5,948,549).

Takayama'549 teaches a copper based sintered contact material which is sinter bonded to an iron-base material (col. 1, ln. 7-11). Takayama'549 further teaches the contact may be a CuSn alloy which contains intermetallic materials including intermetallics of NiAl and TiSi wherein the intermetallic content is between 0.5 to 10 wt % (col. 9, Table 3). While Takayama'549 teaches the non-metallic particle and intermetallic contents in wt%, it is the position of the Examiner that the wt% taught by Takayama'549 would be approximately equal to or fall within the range claimed by Applicant since the amount of material is directly correlated to the volume it would occupy.

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Regarding claim 8, Takayama'549 teaches that non-metallic particles may be contained in the contact including oxides (col. 5, Table 1, No. 20-26). While Takayama'549 is silent to the volume % of the non-metallic oxide particle content, it is the position of the Examiner that the content of 1.5 wt% or less such as exemplified in the examples would meet the claim limitation of being between 0.1 – 4.0% by volume since the amount of material is directly correlated to the volume it would occupy.

Regarding claim 9, Takayama'549 teaches that Mo, Co, Fe may be dispersed in an amount within the range claimed by Applicant (col. 7, Table 2, No. 8-10 and 14).

Regarding claim 10, Takayama'549 teaches that graphite may be contained in an amount less than 1 wt% (col. 5, Table 1, No 14-15).

Regarding claim 12, Takayama'549 teaches that the contact contain roughly 10% Sn and 5% Pb (col. 7, Table 2, No 1-14).

Claims 5, 9 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Takayama'121 et al (US 6,613,121).

Takayama'121 teaches a copper based sintered contact material which comprises intermetallic material dispersed therein (col. 4, ln. 11-41). The intermetallic compounds may be formed from at least two elements such as an intermetallic of Ti alloyed with Al and/or Si or an intermetallic Ni alloyed with Al and/or Si (col. 9, ln. 9-35).

Regarding the limitation that the intermetallic compound is between 0.5 to 10 vol% of the contact, Takayama'121 teaches that depending upon the intended use of the contact material, the volume percent of the intermetallics can vary from 0.2 to 35

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volume% (col. 9, ln. 43-64) which overlaps the range claimed by Applicant and anticipates the claimed range between 0.5 to 10 vol %.

Regarding claim 9, Takayama'121 teaches that the contact may preferably further contain metal elements such as Fe in an amount of 5 wt% or less (col. 8, ln. 46-63). Takayama'121 also teaches that metal or alloy particles comprised of W, Cr, Co may be added also (col. 8, ln. 30-33).

Regarding claim 12, Takayama'121 teaches that the contact may contain between 1-12 wt% Sn (col. 8, ln. 41-45) and may also contain Pb as well (col. 8, ln. 30-33).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama'549 (US 5,948,549) as applied to claims 5, 8-10 and 12 above.

Regarding claim 13, Takayama'549 does not exemplify an embodiment wherein the Sn content is between 12-16 wt%. However, Takayama'549 does not teach the Sn content is limited within any particular range and exemplifies embodiments wherein the Sn contents may be up to 10wt% (col. 7, Table 2, No 1-14). As such, it would have been within the purview of one of ordinary skill in the art to have recognized that

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alternate contents of materials such as Sn could be employed in the copper based sintered contact of Takayama'549 with a reasonable expectation of success. Absent a teaching of the criticality or showing of unexpected results from the Sn content being 12 wt% as opposed to 10wt% as exemplified by Takayama'549, it would not provide a patentable distinction over the prior art.

Regarding claims 14 and 19, Takayama'549 teaches that other elements may be added to the contact material such as Mn, Be and Ag (col. 16, ln. 17-60) as well as solid lubricant graphite (col. 5, Table 1, No-14-15). Takayama'549 is silent to the addition of lubricating particles such as those claimed. However, it would have been obvious to one of ordinary skill in the art to have recognized that any solid lubricating materials, including those claimed by Applicant could be used in place of the graphite solid lubricant of Takayama'549 with a reasonable expectation of success.

Regarding claim 15, Takayama'549 is silent to the sintered contact being a double-layered contact however, sintered double-layered contacts are structures that are well known in the art. Absent a teaching of the criticality of the contact being a double-layered contact, it would not provide a patentable distinction over the prior art since it would have been within the level of one of ordinary skill in the art to have formed the contact of Takayama'549 into any known contact structure, including a double-layered contact, with a reasonable expectation of success.

Regarding claim 16, Takayama'549 teaches that P is preferably contained in an amount of 0.1 to 1.0 wt% (col. 8, ln. 1-8). Takayama'549 further teaches that other elements such as Cr, Si, Al and Ti may be added as well (col. 10, ln. 1 – col. 10, ln. 25).

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Regarding claim 17, the non-metallic particles disclosed by Takayama'549 would restrain shrinkage of the sintered layer just as much as the non-metallic particles claimed by Applicant.

Regarding claim 18, Takayama'549 teaches the addition of CuSn containing greater than 30 wt% Sn (col. 14, In. 44-61). Takayama'549 also teaches the addition of Sn primary powder (col. 11, Table 4, No 18-25). It would have been obvious to have used both the High Sn containing copper and primary Sn powder since Takayama'549 teaches both are suitable for use.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama'549 et al (US 5,948,549) as evidenced by Takayama'775 (US 6,015,775).

Takayama'549 teaches a copper based sintered contact material containing a variety of materials including graphite; however it is silent to the particle size of the graphite materials. Takayama'775 teaches a copper based sintered contact material (col. 4, In. 15-23) which may contain solid lubricant particles such as graphite (col. 3, In. 16-47). Takayama'775 further teaches that the particle size of the solid lubricant particles may be between 100 and 3000 μm (col. 3, In. 17-29). Although Takayama'775 teaches that the solid lubricants are intended to protrude from the contact surface in order to provide a self-lubricating sintered sliding member whereas Takayama'549 is silent to the positioning of the particles, Takayama'775 is merely being provided as evidence that the use of solid lubricant particles having sizes within the range claimed is known in the art.

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In response to the issue whether the reference is nonanalogous art, it has been held that the determination that a reference is from a nonanalogous art is twofold. First, one decides if the reference is within the field of the inventor's endeavor. If it is not, one proceeds to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved, *In re Wood*, 202 USPQ 171, 174. In the instant case, both Takayama'549 and Takayama'775 are generally drawn to copper based sintered contact materials containing solid lubricant particles. Absent a teaching of the criticality of the particles being within the range claimed by Applicant, it does not provide a patentable distinction over the prior art since the use of solid particles having a size of less than 200 μm is known and would have been an obvious design choice to one of ordinary skill in the art.

Response to Arguments

Applicant's arguments filed 6-1-05 have been fully considered but they are not persuasive.

Withdrawal of rejections based on Takayama'121 under section 103

In light of Applicant's indication that the current Application and that of Takayama'121 were, at the time of the invention, owned by the same entity, the rejections based on Takayama'121 under section 103 have been withdrawn.

Argument responsive to other rejections of claim 5 and claims dependent thereon

Applicant argues that no cited reference describes that the total amount of two or more elements selected from the recited group is adjusted to 0.5 to 10% by volume as recited in the currently amended claim 5.

As was recited in the rejections set forth above, Takayama'121 recites intermetallics of two of the claimed elements in amounts which may range from 0.2 to 10 volume % or more (col. 9, ln. 43-64).

Regarding Takayama'549 and supplemental references, although none of the references exemplify embodiments or explicitly recite the intermetallic material content in terms of volume %, it is the position of the Examiner that the references teach intermetallic material contents which would fall within and/or overlap the range claimed by Applicant.

As such, Applicant's arguments are not persuasive and do not overcome the claim rejections as set forth above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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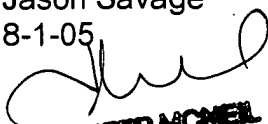
mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason L Savage whose telephone number is 571-272-1542. The examiner can normally be reached on M-F 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason Savage
8-1-05


JENNIFER MCNEIL
PRIMARY EXAMINER